

**What is claimed:**

1. Squeegee apparatus for applying solder paste to circuits comprising:
    - a squeegee blade having a pair of elongated face sides spaced apart by selected thickness and a pair of elongated substantially parallel narrow sides
  - 5 spaced apart by a selected width, said elongated face sides and said elongated narrow sides joined together at squeegee operating edges;
    - a slightly resilient clamping structure having a front portion and a backing portion, said front portion and backing portion defining an elongated rectangular cavity for receiving said squeegee blade, said cavity having a depth less than
  - 10 said selected width, first and second long edges, and a short dimension separating said first and second long edges, said short dimension being less than said selected thickness such that said clamping structure applies a gripping force to said squeegee blade when received by said cavity; and
  - 15 a plurality of fasteners received by said clamping structure for increasing said gripping force applied to said squeegee blade.
- 
2. The squeegee apparatus of claim 1, wherein said backing portion includes an extension beyond and along said first long edge of said substantially rectangular cavity to reduce flexing of said squeegee blade resulting from a force
  - 20 applied perpendicular to one of said elongated face sides.
- 
3. The squeegee apparatus of claim 2, wherein said second long edge of said cavity defines a lip for gripping said squeegee blade.

4. The squeegee apparatus of claim 1, wherein said clamping structure is made from hard rubber.
5. The squeegee apparatus of claim 1, wherein said fasteners are threaded bolts.
6. The squeegee aperture of claim 5, wherein said clamping structure further comprises embedded threaded inserts embedded in said backing portion for receiving said threaded bolts.
- 10
7. The squeegee apparatus of claim 1, wherein said squeegee blade is free of mounting apertures.
8. The squeegee apparatus of claim 1, wherein said squeegee blade is a parallel parallelepiped with four long edges and wherein all four edges may be used as operating squeegee edges.
- 15
9. The squeegee apparatus of claim 1, wherein said squeegee blade is made of rubber.
- 20
10. The squeegee apparatus of claim 1, wherein said squeegee apparatus further includes solder paste overflow guards located perpendicular to each of said ends of said squeegee blade.

11. The squeegee apparatus of claim 1, wherein said clamping structure defining said cavity for receiving said squeegee blade further defines relief spaces to accommodate distortion of said squeegee blade when secured by said clamping structure.

5

12. A method of assembling and using squeegee apparatus comprising the steps of:

providing a squeegee blade having a pair of elongated face sides spaced apart by a selected thickness and a pair of elongated substantially parallel

10 narrow sides spaced apart by a selected width, said face sides and said narrow sides joining together to form squeegee operating edges;

defining an elongated rectangular cavity in a resilient clamping structure having a front portion and a backing portion, said defined cavity having a depth less than said selected width, first and second long edges, and a short dimension

15 less than said selected thickness separating said first and second long edges;

inserting said squeegee blade in said defined cavity; and

increasing a gripping force applied to said squeegee blade by said clamping structure by adjusting a plurality of fasteners extending through said front portion into said backing portion.

20

13. The method of assembling and using squeegee apparatus of claim 12 further comprising the steps of providing an extension on said backing portion beyond and along said first long edge of said rectangular cavity for reducing flexing of said squeegee blade resulting from a force applied perpendicular to  
5 said face sides.

14. The method claim 12, wherein said fasteners are threaded fasteners and further including the step of embedding a threaded insert in said backing portion of said clamping structure for receiving said threaded fasteners.

10

15. The method of claim 12 and further comprising the step of using said squeegee apparatus for applying solder paste to circuit board connections.

16. The method of claim 12, wherein said face sides and said narrow sides  
15 join to define four operating squeegee edges and further comprising the steps of using one of said four squeegee operating edges for applying solder paste to first circuit connections;  
removing said squeegee blade from said clamping apparatus;  
reinserting said squeegee blade into said clamping apparatus such that a  
20 different and unused squeegee edge is exposed as the operating edge; and using said squeegee apparatus with said different operating edge for applying solder paste to other circuit connections.

17. The method of claim 12 further comprising the step of attaching overflow guard members proximate each end of said squeegee blade to prevent excess solder from overflowing the edges of said circuit boards.
- 5 18. The method of claim 12 further comprising the steps of defining relief spaces in said rectangular cavity to accommodate distortion of said squeegee blade due to clamping forces.